UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/929,948	08/15/2001	Yong-Suk Hwang	29926/36998	1644

4743 7590 02/04/2005

MARSHALL, GERSTEIN & BORUN LLP
6300 SEARS TOWER
233 S. WACKER DRIVE
CHICAGO, IL 60606

EXAMINER	
LUGO, DAVID B	

ART UNIT	PAPER NUMBER
2637	

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/929,948	HWANG, YONG-SUK	
	Examiner	Art Unit	
	David B. Lugo	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 August 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 August 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1-4 are objected to because of the following informalities:

   a. Claim 1, line 20, "controllor" should be --controller--.

   b. Claims 2-4 are objected based upon their dependency from claim 1.

   Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nam U.S. Patent 6,515,713.

4. Regarding claim 5, Nam discloses a method for controlling operation modes of an adaptive equalizer comprising estimating a DC value in DC calculator 205 (col. 7, lines 64-66), determining a maximum DC value and a minimum DC value from the estimated DC value (step 406), comparing a difference between the maximum DC value and the minimum DC value with a threshold (col. 8, lines 11-13, step 407), changing the mode of the equalizer to a blind mode if the difference is larger than the threshold when there is possibility of divergence (col. 11, lines 40-52), counting a count number (divergence counter – Fig. 7b) in response to a segment synchronization signal supplied by synchronizing signal detector 202 (col. 7, lines 29-40) when the difference is smaller than the threshold, comparing the count number with a predetermined

number (step 418), and changing the operation mode to a training mode if the count number indicates a predetermined number of iterations have elapsed (col. 9, lines 42-49, step 419) if the difference between the maximum and the minimum DC value is smaller than the threshold, thus indicating no moving ghost, when the equalizer does not diverge (col. 7, lines 3-5).

5. The counter of Nam provides a count down operation from a predetermined number to zero, and thus does not change the mode to a training mode if the count is larger than a predetermined number. However, counting up to a predetermined number as opposed to counting down from a predetermined number is deemed a design consideration that fails to patentably distinguish over Nam.

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nam as applied to claim 5 above, and further in view of Kimura et al. U.S. Patent 6,542,451.

7. Regarding claim 6, Nam discloses a method for controlling operation modes of an adaptive equalizer as described above, where a critical value corresponding to a threshold may be changed according to a designer (col. 8, lines 15-16).

8. Nam does not expressly disclose that the threshold may be based on a median value of the maximum and minimum DC value.

9. Kimura et al. disclose the generation of a threshold based on a median value of a maximum and minimum DC value of received signal (Fig. 7).

10. It would have been obvious to one of ordinary skill in the art to generate the threshold based on a median value of the maximum and minimum DC values according to the system designer (col. 8, lines 15-16).

11. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nam in view of Kimura et al. and Koslov U.S. Patent 5,471,508.

12. Regarding claim 1, Nam discloses a system for controlling an adaptive equalizer comprising a DC estimator 205 for estimating a DC value in a received baseband signal, a microcomputer for outputting a maximum DC value and a minimum DC value from the estimated DC value, an reset section 103 for performing initialization (col. 7, lines 6-19), the microcomputer further operative to calculate a difference DCmax-DCmin (col. 8, lines 6-11), compare the difference with a threshold (col. 8, lines 11-13, step 407), change the mode of the equalizer to a blind mode when the difference is larger than the threshold when there is possibility of divergence (col. 11, lines 40-52), and change the mode of the equalizer to a training mode if a count number indicates a predetermined number of iterations have elapsed (col. 9, lines 42-49, step 419) when the difference between the maximum DC value and the minimum DC value is smaller than the threshold, thus indicating no moving ghost, when the equalizer does not diverge (col. 7, lines 3-5).

13. The counter of Nam provides a count down operation from a predetermined number to zero, and thus does not change the mode to a training mode if the count is larger than a predetermined number. However, counting up to a predetermined number as opposed to counting down from a predetermined number is deemed a design consideration that fails to patentably distinguish over Nam.

14. Further, Nam does not expressly disclose a computing unit for obtaining a median value between the maximum and the minimum DC values, and storing means for storing thresholds for the Dc value and outputting one of the thresholds corresponding to the median value.

15. Kimura et al. disclose the generation of a threshold based on a median value of a maximum and minimum DC value of received signal (Fig. 7).

16. Koslov discloses storing threshold values in a memory 540, where the threshold values are supplied to a comparator 530 (Fig. 5).

17. It would have been obvious to one of ordinary skill in the art to access memory storing threshold values, which are based on a median value of the maximum and minimum DC values in order for the system designer to tailor the system to various DC conditions as a matter of design choice (col. 8, lines 15-16).

18. Regarding claim 2, Nam further discloses that algorithm is initialized based on various conditions including changes in the channel, but does not disclose that the maximum outputting unit and the minimum outputting unit are initialized every 512 field synchronizations.

19. However, initialization of the maximum and minimum outputting units after every 512 field synchronizations is deemed a design consideration that fails to patentably distinguish.

20. Regarding claims 3 and 4, the count number is initialized in step 401 (Fig. 7a).

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Nielsen U.S. Patent 5,684,827 discloses a system for controlling the operating mode of an adaptive equalizer in Figure 1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David B. Lugo** whose telephone number is **(571) 272-3043**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Jay Patel**, can be reached at **(571) 272-2988**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
P.O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David B. Lugo
1/25/05

KHAI TRAN
PRIMARY EXAMINER